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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/532,988

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Hiromi Ebara

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EXAMINER

LOONAN, ERIC T

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/532,988	<b>Applicant(s)</b> EBARA ET AL.	
	<b>Examiner</b> ERIC LOONAN	<b>Art Unit</b> 2189	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 December 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

This Office action is in response to applicant's remarks submitted 4 December 2007 based on application 10/532,988 originally filed 28 April 2005. **Claims 1-16**, as amended, are currently pending and have been considered below.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. **Claims 1-3, 6-14, and 16** rejected under 35 U.S.C. 103(a) as being unpatentable over Nagamasa et al (US PGPub 2004/0177215) hereinafter known as Nagamasa in view of Kawaura (US Patent 6,886,069).

**Claim 1:** Nagamasa teaches a semiconductor memory card comprising a tamper resistant module (Fig 1, 150 – IC Card Chip and 120 – Controller Chip) and a nonvolatile memory (Fig 1, 130 – Flash memory chip), wherein the tamper resistant module includes: an internal memory having a usage area used by a program stored in the tamper resistant module (Fig 26, 162 – EEPROM; Section [0043]); and a processing unit (Fig 1, 120 – Controller Chip and Fig 26, 158 - CPU), and when requested by the program, the processing unit is operable to (i) assign an area in the nonvolatile memory to the program (Section [0051]), and (ii) generate, on the internal memory of the tamper resistant module, access information for the assigned area, the usage area and the assigned area thereby composing a total area for use by the program (Section [0052], Section [0055]). In **Claim 2**, Nagamasa teaches a semiconductor memory card wherein the internal memory stores a first area table indicating a location and a size of the usage area, and a second area table indicating a location and a size of the assigned area, and the access information is the second area table (Section [0051], Section [0052], Fig 21). In **Claim 3**, Nagamasa teaches a semiconductor memory card wherein the processing unit comprises: an assigning unit operable to assign, at a time of the generation of the

access information, an encryption key which the program uses in accessing the assigned area (Fig 23, 2321 – User Certificate; Section [0055]); an encrypting unit operable, at a time of the program writing data to the assigned area, to encrypt the data (Fig 23, 2313; Section [0055]); and a decrypting unit operable, at a time of the program reading data from the assigned area, to decrypt the data (Fig 23 – 2324; Section [0055]). In **Claim 6**, Nagamasa teaches a semiconductor memory card wherein the nonvolatile memory includes a first memory module (Fig 1, 130 – Flash memory chip) and a second memory module (Fig 26, 160 – RAM), and a unit of writing in the second memory module is smaller than a unit of writing in the first memory module, and the second memory module stores file management data (Section [0043]). In **Claim 8**, Nagamasa teaches a semiconductor memory card wherein the internal memory of the tamper resistant module includes a first memory module (Fig 26, 162 - EEPROM) and a second memory module (Fig 26, 160 – RAM), and a unit of writing in the second memory module is smaller than a unit of writing in the first memory module, and the second memory module stores file management data (Section [0043]). In **Claims 7 and 9**, Nagamasa teaches a semiconductor memory card wherein the second memory module is one of a Ferroelectric Random Access Memory and a Magnetoresistive Random Access Memory (Fig 26, 160 – RAM). In **Claim 10**, Nagamasa teaches a semiconductor memory card being a multi-application memory card, wherein the program is one of a plurality of applications with which the memory card is compatible, and the internal memory has a plurality of usage areas corresponding one to one to the applications (Fig 21, multiple areas are assigned to different processes; Section [0051]).

In **Claim 11**, Nagamasa teaches a semiconductor memory card wherein at a time of addition of one of the applications to the memory card, the processing unit assigns an area to be used by the added application (Fig 21, multiple areas are assigned to different processes; Section [0051]). In **Claim 12**, Nagamasa teaches a semiconductor memory card wherein the assigned area is a file system in which files are stored (Fig 21, 2130 – User File Area). In **Claim 13**, Nagamasa teaches a semiconductor memory card wherein the tamper resistant module includes a CPU that executes the program (Fig 1, 121 – CPU). In **Claim 14**, Nagamasa teaches a semiconductor memory card including a host interface which is an interface with a device connected to the memory card, wherein the host interface judges whether a command from the device is an expansion command, and the program starts, if the command is judged to be the expansion command (Section [0059]; DIO terminal 2544). In **Claim 16**, Nagamasa teaches a controlling program in a semiconductor memory card that comprises a tamper resistant module (Fig 1, 150 – IC Card Chip and 120 – Controller Chip) and a nonvolatile memory (Fig 1, 130 – Flash memory chip), and that is executed by a CPU in the tamper resistant module, wherein the tamper resistant module includes an internal memory having a usage area used by an application stored in the tamper resistant module (Fig 26, 162 – EEPROM; Section [0043]); and the controlling program is operable to (i) assign an area in the nonvolatile memory to the application (Section [0051]), and (ii) generate, on the internal memory of the tamper resistant module, access information for the assigned area, the usage area and the assigned area thereby composing a total area for use by the application (Section [0055]).

In **Claims 1 and 16**, while Nagamasa discloses a ROM (Fig 26, 159) in the IC card chip (Fig 26, 150), Nagamasa does not appear to explicitly disclose the contents of the ROM nor a processing unit including a virtual machine and an operating system.

However, Kawaura discloses a ROM which stores program codes, including an operating system (Col 4, Lines 14-19).

Nagamasa and Kawaura are analogous art because they are from the same field of endeavor of integrated circuit cards.

At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Nagamasa and Kawaura before him or her, to modify the ROM of Nagamasa to include program codes as taught by Kawaura.

A motivation for doing so would have been to install software on the non-rewriteable module.

Therefore, it would have been obvious to combine Nagamasa with Kawaura to obtain the invention as specified in the instant claims.

3. **Claims 4 and 5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagamasa and Kawaura in view of Madoukh (US PGPub 2001/0019614).

In **Claim 4**, Nagamasa and Kawaura disclose the semiconductor card of its parent claim.

In **Claim 5**, Nagamasa and Kawaura disclose the semiconductor card of its parent claim. Further, Nagamasa teaches semiconductor memory card wherein the

internal memory stores a first area table indicating a location and a size of the usage area, the nonvolatile memory stores a second area table indicating a location and a size of the assigned area (Section [0051], Section [0052], Fig 21).

In **Claim 4**, Nagamasa and Kawaura do not appear to explicitly disclose a semiconductor memory card wherein the processing unit further comprises: a receiving unit operable to receive a security level from the program; and a storage unit that stores values for different security levels, bit lengths of an encryption key, and encryption methods, the bit lengths and encryption methods corresponding one-to-one to the values, the encryption key assigned by the assigning unit is generated based on a bit length corresponding to the received security level, and the encryption and decryption by the encrypting unit and decrypting unit, respectively, are performed based on an encryption method corresponding to the received security level.

In **Claim 5**, Nagamasa and Kawaura do not appear to explicitly disclose a semiconductor memory card wherein the second area table being encrypted using a predetermined encryption key, and the access information is a set of the predetermined encryption key and information indicating a location of the second area table.

However, with respect to **Claim 4**, Madoukh teaches a receiving unit operable to receive a security level from the program; and a storage unit that stores values for different security levels (Section [0056]), bit lengths of an encryption key (Section [0044], keys with extended lengths), and encryption methods (Section [0044], different hashing algorithms), the bit lengths and encryption methods corresponding one-to-one to the values, the encryption key assigned by the assigning unit is generated based on



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a bit length corresponding to the received security level (Section [0045], encryption key manager assigns keys per the user session), and the encryption and decryption by the encrypting unit and decrypting unit, respectively, are performed based on an encryption method corresponding to the received security level (Section [0044]).

However, with respect to **Claim 5**, Madoukh teaches an encryption key manager (Section [0045]).

Nagamasa, Kawaura, and Madoukh are analogous art because they are from the same field of endeavor of data storage.

At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Nagamasa, Kawaura, and Madoukh before him or her, to modify the semiconductor card of Nagamasa and Kawaura to include the encryption methods as taught by Madoukh.

The motivation for doing so would have been to deploy the data security methods onto the semiconductor card.

Therefore, it would have been obvious to combine Nagamasa and Kawaura with Madoukh to obtain the invention as specified in the instant claims.

4. **Claim 15** is rejected under 35 U.S.C. 103(a) as being unpatentable over Nagamasa and Kawaura in view of Deo et al (US Patent 5,721,781) hereinafter known as Deo.

In **Claim 15**, Nagamasa and Kawaura disclose the teachings of its parent claim and includes a plurality of file systems.

Nagamasa and Kawaura do not appear to explicitly disclose a secure level of each of the file systems being one of high, medium, and low, wherein a first file system whose secure level is high is stored in the tamper resistant module, a second file system whose secure level is low is stored in the nonvolatile memory, and the total area that is a combination of the usage area and the assigned area composes a third file system whose secure level is medium.

However, Deo teaches an authentication system that utilizes different terminals for different security levels (Col 10, Lines 42-67).

Nagamasa, Kawaura, and Deo are analogous art because they are from the same field of endeavor of semiconductor card transactions.

At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Nagamasa, Kawaura, and Deo before him or her, to modify the semiconductor card of Nagamasa and Kawaura to include the authentication system as taught by Deo.

The motivation for doing so would have been to assign different security levels to data for the purpose of storing the data in different locations.

Therefore, it would have been obvious to combine Nagamasa and Kawaura with Deo to obtain the invention as specified in the instant claims.

### ***Response to Arguments***

Applicant's response filed 4 December 2007 based on Office Action mailed on 4 September 2007 has been fully considered below.

Claim Rejections under 35 U.S.C. §102(e)

Applicant traverses examiner's rejection and submits that the prior art of record fails to disclose every limitation as recited in Claim 1.

Applicant submits that the prior art of record clearly does not include a virtual machine and an operation system, and further, that the program on the EEPROM 162 is clearly not a program that is executed by a virtual machine included in the controller chip 120. Applicant's arguments with respect these limitations that the processing unit does not include a virtual machine and an operation system have been considered but are moot in view of the new ground(s) of rejection.

Applicant submits that the prior art of record fails to disclose "when requested by the program, the processing unit is operable to (i) assign an area in the nonvolatile memory to the program". As noted by the applicant, the controller chip causes data that is to be transferred to the IC card chip 150 to be temporarily stored in the buffer area 2114 of the flash memory chip 130. The IC card chip 150 is coupled to flash memory chip 130 via the controller chip. Therefore, the examiner respectfully disagrees with applicant's assessment that the prior art of record fails to teach the limitation.

Applicant submits that the prior art of record fails to disclose "when requested by the program, the processing unit is operable to (ii) generate, on the internal memory of the tamper resistant module, access information for the assigned area, the usage area and the assigned area comprising a total area for use by the program". The applicant further notes clarity on what the examiner believes corresponds to "generate access information for the assigned area". The examiner's position of the scope of the

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limitation based on the wording of the claim language may include a simple read command issued by the processing unit to the "assigned" area. Section [0052] of the prior art of record teaches "The size in which the data cannot be transmitted in the lump to the IC card chip is a size exceeding a permissible data size of the IC card command." The prior art of record teaches a command from the processing unit to retrieve data from the "assigned" area (or flash memory chip).

### ***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIC LOONAN whose telephone number is (571)272-6994. The examiner can normally be reached on Monday-Friday, 7:30am-5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Reginald Bragdon can be reached on (571) 272-4204. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric Loonan/  
Examiner, Art Unit 2189

/Reginald G. Bragdon/  
Supervisory Patent Examiner, Art Unit 2189